

WHAT IS CLAIMED IS:

1. A discrimination primer for amplifying a nucleic acid that includes a first base at a position suspected of a polymorphism and a second base immediately 3' to the first base, the primer comprising:

a first nucleotide, which is located at the 3' terminus of the primer and contains a base that is complementary to the first base;

a second nucleotide, which is located immediately 5' to the first nucleotide and contains a base that is not complementary to the second base;

a segment of nucleotides, which is located immediately 5' to the second nucleotide and is complementary to a part of the nucleic acid that is immediately 3' to the second base; and

a binding member of a specific binding pair covalently bonded to the 5' terminus of the segment.

2. The primer of claim 1, wherein the segment is 5 to 50 nucleotides in length.

3. The primer of claim 2, wherein the binding member is an oligonucleotide 6 to 50 nucleotides in length and not complementary to any part of the nucleic acid.

4. The primer of claim 3, wherein the oligonucleotide 10 to 40 nucleotides in length.

5. The primer of claim 2, wherein the binding member is a peptide.

6. The primer of claim 2, wherein the segment is 10 to 40 nucleotides in length.

7. The primer of claim 6, wherein the binding member is an oligonucleotide 6 to 50 nucleotides in length and not complementary to any part of the nucleic acid.

8. The primer of claim 7, wherein the oligonucleotide is 10 to 40 nucleotides in length.

9. The primer of claim 6, wherein the binding member is a peptide.

10. A method for detecting a polymorphism in a nucleic acid, comprising:
providing a nucleic acid including a first base at a position suspected of a polymorphism
and a second base immediately 3' to the first base;
amplifying the nucleic acid with a first primer and a second primer, wherein the first
primer includes a first nucleotide, which is located at the 3' terminus and contains a base that is
complementary to the first base, a second nucleotide, which is located immediately 5' to the
first nucleotide and contains a base that is not complementary to the second base; a segment of
nucleotides, which is located immediately 5' to the second nucleotide and is complementary to
a part of the nucleic acid that is immediately 3' to the second base; and a first binding member
of a specific binding pair covalently bonded to the 5' terminus of the segment;
contacting the amplified nucleic acid with a second binding member of the specific
binding pair; and
detecting the amplified nucleic acid that binds to the second binding member.

11. The method of claim 10, further comprising amplifying the nucleic acid in the
presence of a second first primer, wherein the first nucleotide in one of the two first primers is
mutant, and the first nucleotide in the other is wild-type.

12. The method of claim 11, wherein the second primer contains a label at the 5'
terminus.

13. The method of claim 11, wherein the second binding member is immobilized on
a solid support.

14. The method of claim 13, wherein the second primer contains a label at the 5'
terminus.

15. The method of claim 13, wherein each of the first binding members of the first
primers is, independently, a peptide or an oligonucleotide not complementary to any part of the
nucleic acid.

1 16. The method of claim 15, wherein the first binding members of the first primers
2 are different oligonucleotides.

1 17. The method of claim 16, wherein the second primer contains a label at the 5'
2 terminus.

1 18. The method of claim 10, wherein the second primer contains a label at the 5'
2 terminus.

1 19. The method of claim 10, wherein the second binding member is immobilized on
2 a solid support.

1 20. The method of claim 19, wherein the second primer contains a label at the 5'
2 terminus.

1 21. The method of claim 10, wherein the first binding member is an oligonucleotide
2 not complementary to any part of the nucleic acid.

1 22. The method of claim 10, wherein the first binding member is a peptide.

1 23. A kit for amplifying a nucleic acid that includes a first base at a position
2 suspected of the polymorphism and a second base immediately 3' to the first base, the kit
3 comprising a first primer and a second primer, wherein the first primer includes a first
4 nucleotide, which is located at the 3' terminus and contains a base that is complementary to the
5 first base, a second nucleotide, which is located immediately 5' to the first nucleotide and
6 contains a base that is not complementary to the second base; a segment of nucleotides, which is
7 located immediately 5' to the second nucleotide and is complementary to a part of the nucleic
8 acid that is immediately 3' to the second base; and a binding member of a specific binding pair
9 covalently bonded to the 5' terminus of the segment.

24. The kit of claim 23, further comprising a second first primer, wherein the first nucleotide in one of the two first primers is mutant, and the first nucleotide in the other is wild-type.

25. The kit of claim 24, wherein the second primer contains a label at the 5' terminus.

26. The kit of claim 24, wherein each of the first binding members of the first primers is, independently, a peptide or an oligonucleotide not complementary to any part of the nucleic acid.

27. The kit of claim 26, wherein the first binding members of the first primers are different oligonucleotides.

28. The kit of claim 27, wherein the second primer contains a label at the 5' terminus.

29. The kit of claim 23, wherein the second primer contains a label at the 5' terminus.

30. The kit of claim 23, wherein the first binding member is an oligonucleotide not complementary to any part of the nucleic acid.

31. The kit of claim 23, wherein the first binding member is a peptide.

32. The kit of claim 24, wherein each of the first binding members of the first primers is, independently, a peptide or an oligonucleotide that is not complementary to any part of the nucleic acid.

33. The kit of claim 26, wherein the first binding members of the first primers are different oligonucleotides.

1 34. The kit of claim 27, wherein the second primer includes a label at the 5'
2 terminus.

1 35. The kit of claim 23, wherein the second primer includes a label at the 5'
2 terminus.

1 36. The kit of claim 23, wherein the first binding member is an oligonucleotide,
2 which is not complementary to any part of the nucleic acid.

1 37. The kit of claim 23, wherein the first binding member is a peptide.

12674-003001-0345